Outline of Proposed Research Work

For Ph.D. in E.A.F.M.

# Impact Of Investment In The Health Sector On The Economic Development Of The State Of Rajasthan

## स्वास्थ्य के क्षेत्र में विनियोग का राजस्थान राज्य के आर्थिक विकास पर प्रभाव


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**APPENDIX - IV-A**

**Format for Outline (Synopsis) of Proposed Research work**

(Reference Ord. 124.11)

1. Nameof Scholar (In English) : VIJAY KUMAR

(In Hindi) **:** विजय कुमार

2. Title of the Research Work :

(In English) : Impact Of Investment In The Health Sector On The Economic Development Of The State Of Rajasthan

(In Hindi) : स्वास्थ्य के क्षेत्र में विनियोग का राजस्थान राज्य के आर्थिक विकास पर प्रभाव

3. Location

a. Institution/Department where the work is to be done:

Department Of Economic Administration and Financial Management, Samrat Prithaviraj Chouhan, Government College , Ajmer

b. Geographical area of Investigation, if any : Rajasthan

## 1. Introduction and Importance of Proposed Research/Investigation:

Economic development usually refers to the adoption of new technologies, transition from agriculture-based to industry-based economy, and general improvement in living standards.

A country`s development is measured by the changing features of its population i.e. its human capital. When we talk about economic development we must describe the element of economic development like its population, technology, natural resources, and infrastructure i.e. social and economic aspects. Social aspect is main element of economic development .socio economic development lead to health, education, medical facility etc.

In this study we will emphasise on the main element of socio-economic development that is health. It is clear that "Health is wealth" and if wealth is lost something is lost but if health is lost, everything is lost because the health condition is directly related with productivity and income. Health is a vital aspect in the development of an economy. Its component is environment, sanitation, safe drinking water, insurance, life expectancy, education, mortality, medical facility etc. Healthy population raise productivity and income level. Actually healthy population creates high productive labour force. So it is very important to investment in health by government of individual because healthy population lead to production labour force and production rate.

India has second largest population in the world. In the year 2016 around 13,00,0000000 crore people live in India with the population rate of 7%. India has world largest youth population but on the other hand India holds 80th position out of 104 countries in global hunger index and 130th position in 188 countries with score 60 in human development index 2015.

Indian health care market is about 100 billion $ and will increase to 280 billion by 2020 and its compound annual growth rate is 22.9% . Rajasthan is India’s largest state by area (342,239 square kilometres (132,139 sq mi) or 10.4% of India's total area). According to final results of 2011 Census of India, Rajasthan has a total population of 68,548,437.

- Current Population of Rajasthan in 2016

  74,791,568
- Demographic, Socio-economic and Health profile of Rajasthan State as compared to India figures:

| Item | Rajasthan | India |
|---|---|---|
| Total Population (Census 2011) (In Crore) | 6.86 | 121.01 |
| Decadal Growth (%) (Census 2011) | 21.44 | 17.64 |
| Crude Birth Rate (SRS 2013) | 25.6 | 21.4 |
| Crude Death Rate (SRS 2013) | 6.5 | 7 |
| Natural Growth Rate (SRS 2013) | 19.1 | 14.4 |
| Infant Mortality Rate (SRS 2013) | 47 | 40 |
| Maternal Mortality Rate (SRS 2010-12) | 255 | 178 |

According to above table Rajasthan`s health profile is very low. In 2014 India invested 4.7% of GDP in health sector which is very low. Investment in human capital within the wider context means expenditure on health, insurance, education and social services broadly involved to incorporate all expenditure that have an effect on the life expectancy of the people.

Investment is very essential for bringing about an improvement in health. For this study we chose two type of investment made for improvement in health:

**(1) Direct investment:** Those investments which are directly related with the return.

**(2) Indirect investment:** Those investments which are indirectly related with return.

Investment in health is basically indirect investment. When the government and individuals invest in health, it would lead to more productive labour force and healthy labour force play vital role in development. To improve the health quality of human resources attention must be given to boost the health status of the country. Both physical and mental health status should be good than only the production capacity of an individual increase. This is turn increase the total productivity and national income of the country there by leading to the prosperity of the economy. Improve the economy through improvement in human resources development; this resulted in the increased importance given to education and health to improvement in the quality of life of the people. To improve health of the people Government of India and Rajasthan state government must invest in housing, sanitation, safe drinking water, environment, PHC, CHC etc. government has announced many programme and policies for improving health facility. Some announced programme is as below:

1. Government of India has announced that 3000 Jan Aushadhi Store (JAS) will open under Pradhan Mantry Jan Yojana (PMJAY) across the country by the end of march 2017 in union budget.

2. A new health protection scheme for health cover up to Rs 1 lakh (us $ 1504) per family.

3. The NITI Aayog ( National Institute for Transforming India ) seek to bring reform in India's public health system like out sourcing primary health care to private doctor and promotion competition between govt. and private hospital at the secondary level and other provisions made in union budget 2016-17.

The government of Rajasthan state budget has made provision for Rs 360.36 crore under Nishulk Dva Yojana DMHS, 431 crore under Jan Swasthya Insurance Scheme , rs 1578 crore under National Rural Health Mission and also announced to open 9 primary health community center and 2 community health center etc.

There are many differences between announcement and implementation of the programme and policy most of the people are not aware with these programme and policies therefore they are investing their income in other health center. Their propensity to save and expenditure on health influences the economic development.

Health is main element of socio –economic development. Health is wealth so investment in health means investment in wealth. To invest in health is positive thing to the economy. When government and individual invest in health, sanitation, drinking water, environment, preventive healthcare, family planning, housing, insurance, mortality, morbidity etc it will improve the human development. Human development play a dominant role in economic development and health is a very important element of socio-economic development. In recent years expenditure on medical services, safe drinking water, nutrition, etc viewed as investment to push health, as a result of such expenditure reduces the chance of mortality, morbidity and enhances the time out there for earning economic development. It is clear that investment in health and economic development have symbolic relation. Investment in health will boost up the economy development.

## 2. Review of Literature

Kenneth Arrow (1963) explores the specific differentia of Medical care as the object of normative Economics demonstrating that the consideration of uncertainty is key to understand markets in health care.[1]

Timmappaya A Pareek Udai and Others have made a research work on "Measuring Patient Satisfaction in a General Hospitals" during 1971. On the basis of his study he concluded that nearly two third of the patients have showed overall satisfaction. The level of Satisfaction was found to be significantly affected by patient educational status, address, ward and the waiting time to get bed. [2]

Paper on "Evaluation of public investment in health care: Is the risk irrelevant?" written by Uri Ben-Zion Amiram Gafni (1983)[3] They explore the application of developments in economic theory to the evaluation of 'Risky' public health programs. We show that the use of expected values as measures of outcome in such programs is inappropriate. Instead we suggest the use of certainty equivalent values measured by a direct assessment (the 'Standard Gamble') as an appropriate way to evaluate the outcome. A paper on "Some issues in attaining Health for all" was published by Dr M.K. Premi in an edited book Titled "Health Planning in India 1997[4]". He pointed out some of the obstacle impending the speed of concerted implementation of health care programmers. He suggested that there has to be increased community and voluntary agencies involvement on the on hand and building of confidence in the government run system on the other.

A paper on "Inter District Variations in Health Services in Andra Pradesh" was published by Professor G. Ramchandrudu and G. Venkata Rao examined the interdistrict variations in health services in Andhra Pradesh. The authors pointed out that there are wide inter district variations in the health infrastructure

[1] Hurley, J. (2000). An overview of the normative economics of the health sector. *Handbook of health economics*, *1*, 55-118.
[2] Timmappaya, A., Pareek, U., & Agrawal, K. C. (1971). Measuring patient satisfaction in a general hospital. *Indian Journal of Social Work*.
[3] Ben-Zion, U., & Gafni, A. (1983). Evaluation of public investment in health care: Is the risk irrelevant?. *Journal of Health Economics*, *2*(2), 161-165.
[4] Ramachandrudu, G. (1997). *Health Planning in India*. APH Publishing.

improvement. The more urbanized districts like Hyderabad and Visakhapatnam have been doing better that the districts with more rural population. While analyzing the inter district variations they observed that the variations with regard to the hospitals and dispensaries is increasing whereas the variations in the number of beds available and the number of doctors is decreasing. The study concluded that the health infrastructure is closely related to the variation in health infrastructure (CPR) and heance it recommended that the variation in health infrastructure among district has to be reduced for the success of family welfare programmes.1997[5]

A paper on "Health Management – A system approach" was published by Professor M. Chandrasekhar and Sri Balaji Prasad[6] in an edited book Titled "Health Planning in India" M. Chandrasekhar observed that health care management in India has failed to create adequate health facilities in rural areas inspite of the increasing plan allocations. Growing inedequalities in the quality of health care between private and government hospitals is the cause of concern. The cost of health care is enormously increasing. The author suggested policy aspects like collection of user charges in government hospitals, promoting health insurance scheme and improving health information system which are the top priorities for better health management system in India. 1997

Strauss, J., & Thomas, D. (1998).[7] The have given some suggestion in their article" Health, nutrition, and economic development[8]" published in Journal of economic literature, that investment in human resources has taken center stage in the study of developing economies. A voluminous set of wage function estimates provides the basis for calculating market returns to education for virtually every country in the world.

[5] Ramachandrudu, G. (1997). *Health Planning in India*. APH Publishing.
[6] Murray, C. J., Ortblad, K. F., Guinovart, C., Lim, S. S., Wolock, T. M., Roberts, D. A., ... & Wang, H. (2014). Global, regional, and national incidence and mortality for HIV, tuberculosis, and malaria during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, *384*(9947), 1005-1070.
[7] Strauss, J., & Thomas, D. (1998). Health, nutrition, and economic development. *Journal of economic literature*, *36*(2), 766-817.

An article on “Impact of Hospitalization of Patients and Their Families” [9]was published by T Subramanian in jurnal “Indian journal of public health” volume 45, issue 1, jan-mar 1998. Major finding of this paper were Hospitalization, especially for chronic diseases have number of varied effects upon a patient and his or her family members.

An article on ”The Return on Investment in Health Care: From 1980 to 2000” written by Bryan R. Luce, Josephine Mauskopf ,Frank A. Sloan ,Jan Ostermann ,L. Clark Paramore [10]calculated that each additional dollar spent on overall health-care services produced health gains valued at $1.55 to $1.94 under our base case assumptions. The return on health gains associated with treatment for heart attack, stroke, type 2 diabetes, and breast cancer were $1.10, $1.49, $1.55, and $4.80, respectively, for every additional dollar spent by Medicare. The ROI for specific treatment innovations ranged from both savings in treatment costs and gains in health to gains in health valued at $1.12 to $38.00 for every additional dollar spent.

Kevin B. Weiss, Sean D. Sullivan, 2001”The health economics of asthma and rhinitis. I. Assessing the economic impact”[12]

As new health care strategies compete with existing ones for limited resources, the health care system and its providers are beginning to turn to health economic analyses to help inform choices in the delivery of care. This 2-part review examines the current health economic literature for asthma and rhinitis. This first installment of the review focuses on studies that characterize the economic burden of asthma and rhinitis and examines how resources are allocated to the care of persons with asthma and rhinitis. In 1998, asthma in the United States accounted for an estimated 12.7 billion dollars annually. Similarly, in 1994, allergic rhinitis was estimated to cost 1.2 billion dollars. Most of the costs for these conditions are attributed to direct medical expenditures, with medications emerging as the single largest cost component.

[9] Subramanian, T. (1998). Impact of hospitalization on patients and their families. *Indian journal of public health*, *42*(1), 15-6.
[10] Luce, B. R., Mauskopf, J., Sloan, F. A., Ostermann, J., & Paramore, L. C. (2006). The return on investment in health care: from 1980 to 2000. *Value in Health*, *9*(3), 146-156.

Indirect costs also represent an important social effect. While cost-of-illness studies help to characterize the economic burden, comparative health economic studies evaluate the value of new and existing strategies for clinical care.

A research article on " Health Economic Evaluations: The Special Case of End-Stage Renal Disease Treatment"[11]

Wolfgang C. Winkelmayer, Milton C. Weinstein, Murray A. Mittleman, D Joseph S. Pliskin[12], discus in article about synthesizes the evidence on the cost-effectiveness of renal replacement therapy and discusses the findings in light of the frequent practice of using the cost-effectiveness of hemodialysis as a benchmark of societal willingness to pay. The authors conducted a meta-analytic review of the medical and economic literature for economic evaluations of hemodialysis, peritoneal dialysis, and kidney transplantation.

A research article by Deaton, Angus (1 March 2003)[13]explore that I discuss mechanisms linking health and inequality and review evidence for effects of income inequality on aggregate and individual mortality, over time and over space. I conclude that there is no direct link. Correlations come from factors other than income inequality itself, some of which are linked to broader notions of inequality and inequity that are most likely important for health. Whether income redistribution can improve population health does not depend on the existence of a direct link between income inequality and health and remains an open question.

Gill and Lesley (2006) [14]evaluated 36 relate studies on service quality in health care to recognize the extra key domains, and the results show that only three studies have gone well beyond the SERVQUAL model and five have deployed entirely diverse approaches.

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[12] Winkelmayer, W. C., Weinstein, M. C., Mittleman, M. A., Glynn, R. J., & Pliskin, J. S. (2002). Health economic evaluations: the special case of end-stage renal disease treatment. *Medical Decision Making*, *22*(5), 417-430.

[13] Deaton, A. (2003). Health, inequality, and economic development. *Journal of economic literature*, *41*(1), 113-158.

[14] Kokko, H., Gunnarsson, T. G., Morrell, L. J., & Gill, J. A. (2006). Why do female migratory birds arrive later than males?. *Journal of Animal Ecology*,*75*(6), 1293-1303.

Acharyulu and Rajashekhar (2007) [15]examined the usefulness of SERVQUAL for measuring the patients perceptions of quality healthcare in selected areas of Bangalore, Chennai and Hyderabad. The important demographical characteristics like age, education and income were taken into consideration for comparison. The study concluded that the significant gaps were associated to reliability, responsiveness and empathy, implying that the health cater is still only 'cur center'. It was suggested that Indian hospitals need to concentrate more on reliability and responsiveness, which can be attained by optimum allocation of resources.

Chandra ballabh has done a research on "Health Care Services in Hospital" during 2007 [16]: he has discussed on health care plans and programmes, evolution on health care system in India, Public Health Services and Health Car Disparities, Health Care Rules, Regulations and laws, Health and Welfare Legislation. He had suggested that government should work more on health Care Efficiency He pointed out on the Control Menhanisms and Strategies in Hospitals.

An article on "Satisfaction of Patients concerning Patient Care in a tertiary care hospital in Punjab[17]" was published by Sheena annmammen and others in the journal "Indian journal of public health Kolkata" volume 53, issue 1 January-March 2009. They have defined patient satisfaction as a personnel evaluation of health care services and providers and thus a vital component of health care out come and remains an area of interest and need in health care. Hence to assess in patient satisfaction a study was conducted in a private tertiary care hospital on a stratified random sample of 100 in a patients drown from four different general wards using a structured questionnaire.

[15] Acharyulu, G. V. R. K., & Rajashekhar, B. (2007). Service quality measurement in Indian healthcare industry. *Journal of International Business and Economics*, *7*(2), 353-360.
[16] Furukawa, M. F., Raghu, T. S., & Shao, B. B. (2010). Electronic medical records and cost efficiency in hospital medical-surgical units. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *47*(2), 110-123.
[17] Mammen, S. A., Varghese, S. R., & Isaac, R. (2008). Satisfaction of in-patients concerning patient care in a tertiary care hospital in Punjab. *Indian journal of public health*, *53*(1), 49-51.

A paper of "Role of administrators vital in Hospital Management Now" was published by the PGI Director Prof K.K. Talwar[18] in the two days National Conference on Hospital Administration recent trends at the post Graduate institute of medical education and research, Chandigarh during 2010. He has highlighted new concepts of National AIDS Control Programmed III. He emphasized on Hospitals was a prime concern which must be ensure by the Hospital administrator.

Yesilada and Direktoe (2010) [19]aimed at testing the Servqual instrument to test the quality of provided in public and private hospital in Northern Cyprus. The factor analysis revealed that three factors were empathy, tangibles and reliability confidence. In the entire mentioned three factor, the private hospitals have lesser gaps when compared with public hospitals. The same observation was made by Mustafa (2005) in this study.

An article on "Strengthening of Primary Health Care! Key to deliver inclusive health care" was published by Rajiv yeruvadekar[20] and others in the journal "Indian journal of public health" Kolkata, volume 57, issue 2, April-June-2011. They have suggested optimal utilization of public resources and increasing public spending on health care, training of paramedical person to reduce cost specialty in tertiary care etc.

A research work done about "Health Insurance, Habits and Health Outcomes: A Dynamic Stochastic Model of Investment in Health" by Ahmed W. Khwaja. [21]He develops a dynamic stochastic model of individual choices about health insurance, exercise, smoking, alcohol consumption and medical treatment. The primary objective is to estimate the parameters of the model to conduct counter-

[18] Goel, R. K. S. (2007). *Hospital administration and management: Theory and practice*. Deep and Deep Publications.
[19] Yesilada, F., & Direktör, E. (2010). Health care service quality: A comparison of public and private hospitals. *African Journal of business management*,*4*(6), 962.
[20] Yeravdekar, R., Yeravdekar, V. R., Tutakne, M. A., Bhatia, N. P., & Tambe, M. (2013). Strengthening of primary health care: Key to deliver inclusive health care. *Indian journal of public health*, *57*(2), 59.
[21] Khwaja, A. W. (2001). *Health insurance, habits and health outcomes: A dynamic stochastic model of investment in health* (No. 166). Society for Computational Economics.

factual health policy experiments. The model is estimated through maximum likelihood using data on 3671 males from the Health and Retirement Study.

A research Article on "Comparative Performance of Prvate & Public Health care system in low and middle-Income countries: a systematic review[22]" published in 19 Jun 2012 by Sanjay Basu. Janson Andrews, Rajesh Panjabi, Devid Stuckler. This research study reports that patients in the private sector experience better timeliness and Hospitality. This research study suggested that providers in the private sector more frequently violate accepted medical standards and have lower reported efficiency.

An International Journal of Trade, Economics and Finance by Lakshmi Santhana k, Ramachandran T.and David Boohene. They studies that the work of female nurses both in public and private hospitals is challengeable one. They need to be a periodical review in terms of their work and personal life satisfaction .vol.3,no 3, June 2012.

An article on "An Innovative National Rural Health Mission Capacity Development Initiative for Improving Public Health Practice in India" was published by Preeti Nagandhi[23] and others in "the journal of public health Kolkata" volume 56, issue 2, Apr-Jun 2012. They have emphasized on improving public health practice as a unique path way to a better health system and Indian government under the NHRM launching a 1 year post graduate diploma in public health management (PGDPHM) to impact public health management knowledge and skills to these professionals in the state health services.

An empirical study by Al-Borie and Sheikh Damanhouri (2013)[24] compares patient satisfaction with service quality in Saudi Arabian private and public sector hospitals by employing SERVQUAL scale. Five hospitals from each sector were selected for the study. The results proved that the demographical

[22] Musgrove, P. (1996). *Public and private roles in health*. Washington^ eD. CDC: World Bank.
[23] Negandhi, P., Sharma, K., & Zodpey, S. (2012). An innovative National Rural Health Mission capacity development initiative for improving public health practice in India. *Indian journal of public health*, *56*(2), 110.
[24] Al-Borie, H. M., & Sheikh Damanhouri, A. M. (2013). Patients' satisfaction of service quality in Saudi hospitals: a SERVQUAL analysis. *International journal of health care quality assurance*, *26*(1), 20-30.

and socioeconomic factors were influencing patients satisfaction. It was concluded that the SEVQUAL instrument is consistent and suitable to measure service quality.

A research project on "comparative study of public and private health services in Mumbai region availability and utilization pattern[25]" by Subhashini B Ary during 28 Feb 2013. She concluded that private hospitals. She suggested that government must increase their Health Expenditure and utilization of public resources should be increased.

Alok Bhargava,Dean T Jamison,Lawrence J Lauc,Christopher J.L Murray wrote an article on "Modeling the effects of health on economic growth[26]" This paper investigates the effects of health indicators such as adult survival rates (ASR) on GDP growth rates at 5-year intervals in several countries. Panel data were analyzed on GDP series based on purchasing power adjustments and on exchange rates

A paper on "Influence of Various Factors on Choice of Hospitals in Southern Rajasthan[27]" was published by Kiran soni and Karuhesh Saxena. In the Indian journal of Commerce Apr-jun 2013. This study was aimed to analyze the relationship between variable which influences patients with special reference to public and private sector hospital locked in five studies districts of southern Rajasthan. The study provided analysis of indoor and outdoor patients' opinion about the hospital and also helped to identity the factors which are more significant to influence a patient including the areas where patients want improvement is services offered by a hospital.

Raghu naga Prabha karkalepu has studied on "Service Quality in Healthecare Sector : An Exploratory study on Hospitals[28]" was published in IUP journal of Marketing management, IUP publication Hyderabad, vol. XII, issue 1, February

[25] Arya, S. B. (2012). Comparative study of Public and Private Health Services in Mumbai Region availability and utilisation pattern.
[26] Bhargava, A., Jamison, D. T., Lau, L. J., & Murray, C. J. (2001). Modeling the effects of health on economic growth. *Journal of health economics*,*20*(3), 423-440.
[27] Kesterton, A. J., Cleland, J., Sloggett, A., & Ronsmans, C. (2010). Institutional delivery in rural India: the relative importance of accessibility and economic status. *BMC pregnancy and childbirth*, *10*(1), 30.
[28] Kalepu, R. N. P. (2014). Service Quality in Healthcare Sector: An Exploratory Study on Hospitals. *IUP Journal of Marketing Management*, *13*(1), 7.

2014. This research study has measured service quality in selected hospitals of Krishn district of Andhra Pradesh and attempted to diagnose service quality gaps. The results of the present study confirmed that the demographical factors and socioeconomic status play a vital role in patients satisfaction toward service quality. The same was also confirmed by the patients satisfaction level, which depends on the demographical factors and socioeconomic conditions. The findings also lead to the conclusion that servqual scale is valid and reliable (with some modifications), and could identify the shortfalls of service quality in healthcare sector.

## 3. Research Gaps Identified in the Proposed Research

Review of literature leads to the following research gaps:

The area of health economics in Indian context is relatively new and in up-and-coming phase. The policies made by local and central governments are made for both general and weaker sections of the societies. Henceforth, the benefits received by the both societies are not measured separately but in general. The previous studies did not contrast over the weaker societies to explain health related dynamics.

Researcher could not find any particular study about health economics or investment in health in the context of Rajasthan. The researcher wants to know what is the behaviour of the people who are living in Rajasthan about the investment in health and what kind of strategy they are applying for health because the health activity influence the propensity to save, income, government's investment, sanitation, and other element of economic development. The HDI of Rajasthan stands 17$^{th}$ Position in India, in the health aspect. Along with this there is a positive change in the government policies which also support these kinds of functions. The researcher thinks that it is the right time to analysis the outcome of the effort done by govt. In the direction of investment in health of Rajasthan

this will lead us to know opportunity, weakness, strengths and threats and give remedial measures of improving weakness and marinating of the programmes.

## 4. Objectives

The Primary Objective of the research is to analyze and measure the quantum of investment in health sector made by both individual and the government to maintain and increase the aggregate productivity over a period of last five years.

The Secondary Objectives of the study are as follows:

1. To study the relationship between productivity and health.

2. To portray the in-depth view of investment upon health and its impact on economic development.

3. To establish relationship between expenditure on health and components of economic development including Human Development Index.

4. To critically evaluate present policies and programmes of Government of India and Government of Rajasthan in order to compare them with international standards and trends.

5. To study the individual behavior toward health services provided by the Governments and by the private sector.

## 5. Hypotheses

Following hypotheses have been formulated in accordance with objectives of the study:

### Null Hypothesis

**Ho:** Investment in health is not related to economic development.

### Alternate Hypotheses

**$Ho_1$:** Investment in health has no significant relationship with productivity.

**$Ha_1$:** Investment in health has significant relationship with productivity.

**$Ho_2$:** Investment in Health is not related to income of individuals.

**$Ha_2$:** Investment in Health is related to income of individuals.

**$Ho_3$:** Health facilities have no significant relation with HDI.

**$Ha_3$:** Health facilities have significant relation with HDI.

**$Ho_4$:** Health awareness has not significant impact upon expenditure on healthcare.

**$Ha_4$:** Health awareness has significant impact upon expenditure on healthcare.

**$Ho_5$:** Individual income doesn't affect the expenditure on medical care.

**$Ha_5$**: Individual income does affect the expenditure on medical care.

**$Ho_6$**: Health awareness doesn't affect the quantum of savings.

**$Ha_6$**: Health awareness does affect the quantum of savings.

**$Ho_7$:** There is no significant relationship between the investment on health and satisfaction of individuals.

**$Ha_7$:** There is significant relationship between the investment on health and satisfaction of individuals.

## 6. Research Methodology

### Research Design

Proposed Research involves empirical investigation of dynamics of health economics. Proposed research characterized by the prior formulation of specific research questions and hypotheses testing. Thus, the information needed is clearly defined. As a result, this research is pre-planned and structured. It is typically based on predetermined representative samples and specifies the methods for selecting the sources of information and for collecting data from those sources.

The proposed study envisages with the responses received from the individuals which are health conscious and/or participating in the process of health related dynamics. Moreover, the individuals under the study are to be analyzed in reference to the above mentioned research objectives and hypotheses. Another aspect is to be analyzed accordance to the policy implementation those have been framed by local and central governments. This aspect can be measured and analyzed by taking responses from the executives of these policies i.e. doctors at division level hospitals.

### Sample Design

*Population*- all individuals of seven divisions of Rajasthan State

*Elements*- individuals which are participating in health related issues

*Sampling Unit*- individuals and doctors which are selected for this proposed research

*Sampling Techniques*- For the proposed study, Judgment at first stage and Simple Random Sampling at second stage has to be taken.

At the first stage, for the purpose of sampling, the seven administrative divisions of Rajasthan State have been selected for study. The seven divisions are as follows:

1. Ajmer Division
2. Bharatpur Division
3. Bikaner Division
4. Jaipur Division
5. Jodhpur Division
6. Kota Division
7. Udaipur Division

**Sample Size-** Since the probable sample size within the time and cost constraints, would be 700 individuals and 140 doctors.

| Division | Probable Sample Size | |
|---|---|---|
| | **Individuals** | **Division Level Hospital✦** |
| Ajmer | 100 | 1 |
| Bharatpur | 100 | 1 |
| Bikaner | 100 | 1 |
| Jaipur | 100 | 1 |
| Jodhpur | 100 | 1 |
| Kota | 100 | 1 |
| Udaipur | 100 | 1 |
| **Total** | **700** | **7** |

✦ micro level observation with respect to revenue and exependiture and other aspect will be discussed with hospital superintendents.

**Sources of Data and Information**

Primary as well as Secondary data sources will be used to generate evidence to supplement the research design.

The tools and techniques used for data collection and analysing of the same are described as: Data will be collected by the researcher himself with the structured interview schedule developed for the study. The interview schedule is constructed for the 700 individual from the division of Rajasthan so as to collect information in line with the objectives of the study. As the target respondents are mostly illiterate or semi-literate this tool is best suitable for conducting the research.

Before starting an interview, the researcher will introduced himself and explained the purpose behind for holding the interview to the respondent. During the course of interview, questions will be asked serially the respondents. Whenever necessary, questions will be explained to them to ensure proper understanding, and being local from Ajmer, Rajasthan the researcher has advantage of local language too. This helps in getting

appropriate responses. Each completed interview schedule will be examined immediately after the closure of an interview for its completion in all respects, in case the respondent is not able to explain at the time of asking question or some of the questions is skipped in the flow.

**Research Instruments**

1. Questionnaire for Individuals

2. Questionnaire for Doctors

**Analysis Tools**

The proposed research study envisages with the following analysis tools:

1. Factor Analysis

2. ANOVA, MANOVA, ANCOVA

3. Correlation

4. Multiple Regression

## 7. Limitations of Study

Since the proposed study is relatively new in its discipline, it may have some limitations such as:

1. There may be relatively less feasible sample size in contrast to population.

2. There are chances of biasness in self reported data i.e. biasness in observations.

3. Cost and Time Constraints.

4. Up to some extent, the study is based on secondary data and there are possible causes to be differing in objectivity.

## 8. Chapter wise details of Proposed Research

### Chapter – I Introduction

This Chapter is introductory in nature, which will cover the meanings and various dimensions of investment in health and economic development. This chapter also tries to highlight the

Important factors which promote good health, and some others which affect health. Further, it also tries to highlight the cost of treating the sick, loss of man-days and their impact on the economy.

### Chapter – II Health based International, National and Regional Level Standards, Policies, Programmes and their Implementation

This chapter will cover some of the experiences of Developed and Developing Countries highlighting major developments in health sector at International, National and Regional Level. Its importance and the expenditure made on this sector have been analysed in general. In this chapter we will discuss about the International, National and Regional Level Standards like WHO, union budget, rajasthan budget etc. and policy and programmes such as Pradhan Mantry Jan Aushadhi Yojana (PMJAY), Jan Aushdhi store ,new health protection scheme, CSC, PHC, etc. and their implementation.

This chapter takes into consideration the difference between less developed countries, developing countries and less developed countries in health level and it also highlights the difference which has been exhibited in the pattern of diseases. The total amount of world spending on health care and the share of governments' have been analysed and through that the significance of government expenditure in health sector all over the world has been discussed. WHO also supported the countries through

training courses in health planning and it is called for strengthening of the financial basis of health activities.

Almost 180countries have signed commitments to specific goals for their countries to improve the health. This chapter also tries to highlight the contributions of other International Organisations for the development of health sector in LDCs. It also deals with some of the current challenges in health sector like AIDs, old age crisis etc. Financing of Health Services in India and Under Five Year Plans - Policies, Programmes and Achievements - national health scene is discussed in detail. The preamble of the constitution of India envisages the establishment of a new social order based on equality freedom and dignity of the individuals. It aims at the elimination of poverty, ill health, improvement of public health, living standard etc., as its primary duties, among others. It mentioned that India is fully committed to secure the objectives of 'Health for All' through the Primary Health Care approach. So it is the responsibility of the Rajasthan state to provide health facilities to its entire people.

**Chapter – 3 Dynamics of Health Economics in an Economy**

This chapter would cover the Ethnographic and Behavioural issues in microfinance. Instead of this, this chapter will discuss Points of financial operations and role of behavioural and psychological variables of lenders and borrowers simultaneously.

**Chapter – 4 Review of Literature**

There are many qualified researchers from the world and well as in India already worked on the topic of investment in health and economic development. In this section, the researchers is going to get the various view and reviews of different researchers on the above mentioned topic so

that in the light of the work already done and the areas in which the research work is required due to the limitations of researchers or due to limitation of geographical area or any reasons can be studied and those research gaps can be fulfilled by the current research.

This study is informed by the literature surrounding investment in health and economic development. In this research the researcher is going to review current research surrounding these two topics majorly and other topics related to the research.

**Chapter – 5 Research Methodology**

This chapter would present the objectives for this research study. The chapter shall also discuss the Hypotheses to be tested and the research design, sample design and the method of data collection which will be used. This part deals with the research methods and techniques used in conducting the present study which is designed to understand and analyze the health economics and economic development.

**Chapter – 6 Data Analysis and Interpretation**

This chapter would cover the analysis of data gathered from Primary and secondary source, inter alia covers the analysis of Primary data gathered from Judgment sampling at first level and Convenience sampling method, by application of various statistical tools such as Chi Square test, factoring and other advance statistical applications. This would equally cover the secondary data analysis from Ratio analysis management tools etc.

**Chapter – 7 Findings, Conclusions and Recommendations**

This chapter would be based on the results and observations recorded through the analysis and interpretation from the previous chapter. This chapter would give the final outcome of the present study, which can further be used for advance studies, on the subject.

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